THE

JOURNAL OF HEALTH,

AND

RECREATION.

Health—the poor man's riches, the rich man's bliss

"*As much as in thee lies, live at heart's ease.*"

VOL. IV.] PHILADELPHIA, JULY, 1833. [No. 11.

CHOLERA.

Neither alarmists nor fatalists, we have on the one hand, in this Journal, refrained from working on the fears of our readers by exaggerated pictures of danger from cholera; and on the other have discouraged the idea, that the disease is a scourge from which there is little chance of escape, take what care we may. We have contended all along, that however we may admit the existence of a general deterioration or poison of the atmosphere, as the primary and predisposing cause of cholera, it is equally clear, that but for local and controllable causes and personal indiscretions, this kind of atmosphere would soon have its strength diluted and rendered comparatively harmless and inert. Cleanliness and ventilation of streets, yards and houses—cleanliness of person, regular hours of repose, temperance both in eating and drinking, suitable clothing—and it is only suitable when adapted to changes and vicissitudes of weather—will prove to be means of nearly entire exemption from the disease. When we speak of temperance in food, we mean not only the moderate use of all that is eaten, but also entire abstinence from those articles which give no strength to the frame from not being converted into chyle and blood; but which heat, irritate or directly poison. Among these we include crude, that is pithy and fibrous and stringy vegetable substances, mixed and made dishes of animal matters—and above all intoxicating drinks. Never was the voice of history more clear and distinct than when uttering the experience in all countries and climates—that the drunkard and the free drinker

of ardent spirits have been especially liable to the disease and, proportionately, in greatest numbers, died under it. From India to the pole, from the banks of the Ganges to those of the Mississippi; in all the intermediate regions and districts has this great and awful truth been proclaimed. Nor need persons, loth to abandon their vicious courses, even when disease and death are before them, ask what substitutes they should use as a drink for ardent spirits. There is but one universal drink every where furnished by nature and by nature's God—that drink is water. Substitutes indeed!—do men ask what substitute they shall use for a deadly poison—and is there a more deadly and more generally destructive one than ardent spirits, used as a drink. We would conjure those persons, who have hitherto been subjected to the habitual practice of drinking ardent spirits, not to tamper any longer with their health, their lives, their quiet in this life, their hopes of the next, by either continuing the practice or by listening to the language of sophists and deceivers, who may recommend them strong brandied and drugged wines as a substitute—especially that most detestable of all mixtures, the most adulterated vinous compound—the common port wine of commerce. Let not our fellpw citizens wait till the pestilence is among them, and their fears prevent their taking any wise and decided course. Now is the time for action, for rallying round the standard of temperance; and for beginning, if they had not before been in the constant habit of doing so, the use of water as their sole drink.

RECOLLECTIONS OF THE CHOLERA.

The following graphic description of the cholera under the above title is from the pen of the *Ven. G. B. Mountain*, Archdeacon of Quebec.

Id quoque quod vivam munus habeo Dei.

According to the census taken in pursuance of the Provincial Act in 1831, the population of the City and Banlieue of Quebec amounted then, in round numbers, to something more than 28,000, of whom nearly 21,000 were Roman Catholics, very nearly 5000 of the Church of England, and the remainder (approaching toward 2,500) of other Protestant denominations. As far as has been hitherto ascertained, the whole number of deaths by cholera in the year following, has amounted to about 2,800. From these data, it would appear that the whole population has been decimated by the pestilence; but beside some increase of the resident population, on the one hand, it is to be taken into the account, on the other, that the *transient* population of the summer, (whatever proportion it may have borne to the whole,) furnished many subjects for the melan-

choly list—the disease having prevailed among such of the emigrants as landed, and among the sailors also in the port.

The number of interments by the ministers of the Church of England during the whole of the year 1831, was 382. In 1832, it was not far short of that number in the month of June alone, and in the whole year has amounted to 975. The total of interments from cholera among the whole Protestant population is estimated at 785. Upon the two consecutive days, however, mentioned in the sermon, (the 15th and 16th of June,) upon each of which upward of 70 were interred by myself, it appears probable that among the bodies sent from the hospital to the Church of England burial-ground, in the distracting confusion which then prevailed, there was a considerable proportion of Roman Catholics and very possibly were some Protestants of other communions. And there is no doubt that some persons have been buried without its being known where; and without any registration or particulars.*

Never can the scene be forgotten by those who witnessed it, which was exhibited in the dusk of one evening, at the Emigrant Hospital, before the forced exertions of some members and agents of the Board of Health had provided another building in the lower town, exclusively for the reception of cholera patients. A house opposite to the hospital had been engaged to afford additional accommodation, but the unfortunate subjects for admission came pouring in before arrangements at all sufficient could be completed, and the desertion, in one afternoon, of part of the servants who had been hired, rendered the attendance, before most inadequate, so miserably inefficient, that the passages and floors were strewed with dying persons, writhing under wants to which it was impossible to minister, some of whom, I believe, actually died before they could be got to a bed. The Health Commissioners, the head of the medical staff, and the first medical practitioners of the city were upon the spot together, and doing all they could, but how could their skill and judgment meet all the exigencies of such a moment? Women were met at the doors bewailing their affliction, who had come too late to take a last look at their husbands while alive: parents or children were surrounding the death-beds of those dear to them: patients were, some clamoring in vain for assistance, some moaning in the extremity of langor, some shrieking or shouting under the sharp action of the cramps;† friends of the sufferers were contending angrily with the bewildered assistants: a voice of

* The rule uniformly acted upon when it became practicable to observe more order and method, was that a card was placed at the head of each bed, specifying the name, country, religion, &c., of the patient, and the date of his admission. This card, after death, was nailed upon the coffin, before the body was sent away for interment.

† The delineations of poetry in representing either affliction or disease were, in many points, completely realized in the scene here portrayed; and in reflecting upon it since, the expressive description of Virgil has come into my mind:—

Lamentis, gemituque et fœmineo ululatu
Tecta sonant—

authority was occasionally heard enforcing needful directions, but quickly required in some other quarter of the establishment—a voice of prayer was also heard, and the words interchanged between the dying and their pastors were mingled with the confused tumult of the hour.—The clergy, in passing through some quarters of the town to visit the sick, were assailed sometimes by importunate competitors for their services—persons rushing out of the doors or calling to them from windows to implore their attendance upon their respective friends, and each insisting upon the more imperative urgency of the case for which he pleaded.

I have no reserve whatever, in mentioning my own part in these occurrences, because to suppose that the clergy are entitled to any extraordinary credit for not flinching from their plain and proper duty in such cases, seems to involve a supposition that men whose whole employment relates to the business of preparation for eternity, and who preach CHRIST as the resurrection and the life, are *less* expected to be armed against the fear of death than all the other persons who are engaged in visiting and tending the sick, and performing their various offices successively required after death. A medical man might argue in the same words, although not throughout used precisely in the same sense, as those which I have heard suggested for the use of a clergyman. These are cases in which I can do much less good than in other labours of my profession: many of them are almost hopeless, with respect to my doing any good at all. Is it right that I should consume my time and expose my life for the sake of such cases, when, if it is prolonged, I may be an instrument of saving many of my fellow-creatures?—There is indeed a canon which directs the clergy to visit their parishioners in sickness, if it be not known or probably suspected to be infectious. But the rubric of the prayer-book was framed in better days, which provides for the case "where none of the parish or neighbours can be gotten to communicate with the sick in their houses for fear of the infection," and assumes it as a matter of course that their minister will visit them under those circumstances.

With respect, however, to the much agitated question of the contagious or infectious nature of the cholera-morbus, the obscurity of

as well as parts of the passage in Milton which depictures a scene exhibited in vision to Adam:—

> * * * Immediately a place
> Before his eyes appear'd, sad, noisome, dark;
> A lazar-house it seem'd, wherein were laid
> Numbers of all diseased; all maladies
> Of ghastly spasm or racking torture, qualms
> Of heart-sick agony. * * *
> * * * * * *
> Dire was the tossing, deep the groans: despair
> Tended the sick busiest from couch to couch.

Despair was to be seen every where, as far as concerned the *recovery* of the sufferers. And sometimes despair of their *souls*. "It is too late," they would sometimes say to the minister, themselves.

the disease in this and in all respects has been the subject of remark; and I am far from offering to lift a presumptuous hand to cut the entanglements of the Gordian knot, nor am I qualified to set the subject in a scientific light; but as it regards simply the courage called into action, in visiting the sick, it does not seem necessarily of a very high order, when it is recollected that the medical gentlemen who are constantly busy in contact with the patients; the clergy who, to talk with them to any purpose must, in many instances touch them and receive their breath close to their own;—the friends and attendants about them night and day, who relieve them by friction of the hand till they are themselves perspiring with open pores—and others who handle their clothing and bedding before and after death, *remained quite as exempt as any other classes of persons from the disease.*

That *this* disease may be propagated and made to adhere, in a manner, to particular places by causes which tend to generate diseases at large, appears sufficiently natural and is supported by a variety of instances which are known to have occurred.

The Roman Catholic clergy connected with the establishment of the seminary, gave public notice of the closing of that institution, in order to enable them to assist in the task of attending the sick, in which the whole body were unceasingly engaged. One after another, indeed, all the schools of the city were closed.

The conveyance of bodies to the burial-grounds in open carts piled up with coffins, continued after the Board of Health had provided covered vehicles for this purpose, (attached to the hospitals, but disposable for the same service elsewhere,) from the unavoidable insufficiency of the provision. I saw upon one occasion, twelve bodies thus conveyed, from *one* hospital and at *one* time, to the *Roman Catholic* place of interment *alone*. Many fables were abroad among the lower orders, respecting persons said to have been buried alive, in consequence of the order for their interment within a certain number of hours. It is a fact, however, that the hospital-servants were in the act of taking an old Englishman from his bed to the dead-house, when some sign of life appearing, they brought him back, and he ultimately recovered. This I had from his own lips. One of the Roman Catholic Clergy also informed me that a person whom he had visited was found to be alive, after being laid in his coffin, but died shortly afterward.

The symptoms, in general, were much less horrible, although the disease, I believe, was equally fatal, among children. I do not remember to have seen an instance in which they were affected by the cramps. I saw two little things of the same family, lying, one day, in the same bed, at the hospital, to die quietly together, like the babes in the wood.

In some instances the hand of death produced very little immediate change of appearance. I recognized a man one day in the hospital, whom I had visited the day before at his lodging; and upon my coming up to speak to him, the apothecary said to me, "Sir, that man is dead." His eyes were quite open.

It was one of the characteristic occurrences of the time, that boards were put in various quarters of the town with the inscription, COFFINS MADE HERE.

I remember seeing one day at the foot of Mountain-street, a coffin containing a body, let down from a high garret, on the outside of the house, by ropes. It had never passed probably in the mind of the unfortunate lodger, that the stairs by which he gained his lodging, would not afford passage to him for leaving it, in case of death. I was informed of a similar occurrence at another house, where the coffin burst open.

I have mentioned the case of a drunkard smitten in the street, in a state of drunkenness. I saw him siezed by the cramps, and with the assistance of a couple of health-wardens, got him conveyed to the Emigrant's Hospital. His wife, who was also intoxicated, made violent resistance to his removal. It was, I think, a day or two after this, that the *Cholera* Hospital was opened. Upon my going there, the first person to whom my attention was directed, was this woman. She was then dying. They left two orphans, who were afterward received into the Female Orphan Asylum.

I was once attending to bury a young man who had died of cholera, after having just obtained a decent situation in a mercantile house; and while I was still over his grave, an affectionate letter from his sister, in Europe, was put into my hands, which had arrived too late for him to read it. She reminded him that perhaps *before that letter could reach him*, himself, or some of the persons interested about him, might be *mingling with the clods of the valley*. She earnestly conjured him to abstain from the seductive poison, which it appeared, he had used imprudently before.—I believe that he had not been guilty of intemperance in Quebec.

I have been assured that some men were brought into hospital, having been picked up in the streets under the supposition of being affected by cholera, but found to be only what is vulgarly called *dead drunk;* and that the same individuals, having been discharged as soon as sobered, again gave themselves up to drinking, and were brought in under no false alarm, a second time, but actually sick, and that unto death, of the disease.

In the early part of August, when the pestilence had much abated, the Bishop held a visitation of the Clergy, at Montreal, which, in the earlier stage of the calamity, had been postponed. I was appointed to preach the Visitation Sermon, and of course left Quebec for that purpose. Upon my return, I was in company in the steam-boat, with an unfortunate gentleman, who had lost himself by habitual excess. He was at the breakfast-table with the other passengers, on the morning of the second day. A few hours afterward, on that same day, his corpse was sewed up in sacking, and thrown overboard with weights attached to it, in conformity with the orders of the Board of Health. I read over the body part of the burial service appointed to be used at sea, with some slight adaptation to the case. I had been with him in his dying hour, and it was one of the worst cases that I witnessed. He could scarcely articulate;

but, in broken half-sentences or single words, was every instant importunately crying for something to assuage his thirst, tossing and turning at the same time, without the respite of a moment. A kind of half-mucilaginous drivel streamed profusely from his mouth. His countenance was ghastly, and his skin clammy in the extreme; and the short work of this wonderful disease was exemplified (as in other cases) by his having the appearance of a person reduced and worn by the severe action of some long-continued illness. After his death, the Captain of the boat proceeded to take a kind of inventory of such effects as he had on board. Among these was a snuff-box, with a representation upon the lid, of some figures carousing at a table, and a stanza from a drinking-song beneath.—*Ah!* said the Captain, *that is the song that he was singing when he came on board yesterday.*

It was a horrid death. I cannot say that the unhappy man could be called *impenitent*—if the term penitence can be applied to the distress of mind under which he laboured. He seemed alarmed about himself, and very anxious that something or other should be tried in behalf of his perishing soul. When I first went in, he was able to say, *I am a dead man.* He afterward put his finger to his open mouth, as a sign, and uttered the single word, *sacrament*, the administration of which was, of course, utterly out of the question, and I believe that I succeeded in turning him from such an idea.* A minister can hardly be placed in a more painful situation. He can hardly pray with hope; and without hope, he can hardly pray with faith.

Should this publication fall into the hands of any person upon whom a habit of undue indulgence in liquor is gradually stealing, let him be warned by these fearful examples. And oh! let those who live by selling what so often carries ruin to soul and body, consider well their own case!

There was another case of cholera among the female passengers in the steerage, but the woman recovered, and is now living.

The unfortunate gentleman, mentioned above, did not belong to the Province.

It was a remark that I often made during the continuance of the cholera, how little the face of nature betrayed the sadness of the time, or showed any symptoms of that principle of death which was in such fearful activity among the delegated lords of creation. I was particularly impressed with this kind of feeling upon some of the lovely summer evenings, on which I officiated at the burial-ground, then still unenclosed. The open green, skirted by the remains of a tall avenue of trees, and contiguous to the serpentine windings of the River St. Charles, beyond which you looked across meadows, woods, and fields dotted with rural habitations, to the mountains which bound the prospect, the whole gleaming in the

* It was impossible to suppose that his desire for the Sacrament was prompted by his having in that moment clearly apprehended a proper interest in the sacrifice which it represents.

exquisite and varied lights of a Canadian sunset, formed altogether a beautiful and peaceful landscape, and seemed a "fit haunt of gods." How melancholy and striking the contrast with all that had been deposited, and which it remained to deposit, in the spot upon which I stood! How full of deep reflection upon the ravages of SIN! How coupled with deep thankfulness to HIM who came to repair those ravages in the end, and to "make all things new!"

ON HYBERNATION, OR THE WINTER SLEEP OF ANIMALS.

In a very interesting paper on Hybernation, Dr. Marshall Hall remarks that there is a strong analogy between this singular state and that of ordinary sleep, the former being only a much exaggerated condition of the latter. In both, the necessity of breathing is lessened; Messrs. Allen and Pepys first established the truth of this, in reference to ordinary sleep, and it is very probable that muscular irritability becomes at the same time more energetic, just in the same manner as in hybernation. These phenomena are more obvious in the ordinary sleep of the hybernating, than of any other animals; for example, Dr. Hall observed a bat while asleep, and found that its respiration became very imperfect; that its temperature was only a few degrees above that of the atmosphere, and that it might be kept under water for 11 minutes without injury to life. Similar observations were made upon hedgehogs: while active, their temperature was 95, while asleep it was only 45°, that of the atmosphere at the time being 42° or 43°. The experiment was the more striking when one hedgehog was asleep, and another was lively, in the same box: the temperature of the former was ascertained to be 49°, and that of the latter to be 87°. Similar results were obtained in many experiments on dormice. These animals awake daily in moderate temperature, eat and then fall into a state of sleep; during which the respiration is very imperfect, and the heat of their bodies is little higher than that of the atmosphere.—From these statements it appears that the ordinary sleep of hybernating animals is, as it were, intermediate, and forms a link in the chain of resemblance between the sleep of the other mammalia, and the state of perfect hybernation. When a hybernating animal is asleep, their need of respiration is much more lessened, and their temperature falls much lower than in their active state; now this sleep probably passes into true hybernation as the blood which circulates through the brain becomes more venous, and as the irritability of the heart becomes more exalted. Our readers will now perceive the great importance of ascertaining exactly the state of hybernating animals, in reference to sleep. When observations on the temperature of these animals are very carefully made, we have seen that, in the course of an hour or two, their heat may vary 30 or 40 degrees. The experiments of Mr. Hunter, and more recently of Dr. Edwards, are faulty in this respect; as we are not informed whether the animals were quite lively, or dormant, or recently recovered from a dormant state: the hybernating animal, in a state of

activity, is quite another vital being, from the same animal in a state of dormancy.

1. *Of the Respiration during Hybernation.*—That this function is very nearly suspended, is inferred from the following facts;—we cannot detect any movements of breathing; the air of the pneumatometer, in which the animal is confined, is scarcely changed; the temperature of the animal is the same as that of the atmosphere; and lastly, it is capable of supporting, for a great length of time, the entire privation of air. When a bat, or hedgehog, in a state of hybernating torpor, was carefully watched, no alternate movements, either of the chest or of the abdomen, could be perceived; but the least touch, the slightest shake, immediately caused the bat to commence the alternate acts of breathing, and the hedgehog to take in several deep and onerous inspirations. As to the effects on the air in the pneumatometer, the result of Dr. Hall's enquiries is, that a bat in a state of hybernation, which was kept in for ten hours, did not sensibly affect the air; whereas the same animal, when active, absorbed or converted 5.8 cubic inches of oxygen into carbonic acid, in the course of one hour.

It may be a question, whether the slight changes which we find to have taken place in the air, during some experiments, are referable to the cutaneous respiration. Dr. Hall very properly remarked, that this point is not very easily settled, because we are not positively to infer that the play of the lungs has entirely ceased, although we cannot appreciate it; there may still occur a slight diaphragmatic breathing. In judging of the temperature of an animal in a state of hybernation, the greatest caution is requisite, to avoid all disturbance of it, as the least motion will sometimes induce respiration, and the consequent evolution of animal heat. Dr. Hall details the results of 32 observations; in 29, the temperature of the animal was precisely the same as that of the atmosphere; and in the other three, it exceeded the latter only by half a degree: we may therefore assume, as an established fact, that the heat of animals, during hybernation, follows that of the atmosphere. It is singular to observe the very rapid elevation of the heat, when there is the slightest restlessness of the animal; a change from 48°, to 80° or 90°, is often observable in the course of an hour. Dr. Hall considers that Dr. Edwards has fallen into a great mistake, when he compares the young of those animals which are born blind, and which, he discovered, were less capable of resisting cold than the young of other animals (vide Review of Dr. Edwards' Researches, in our last number) to the hybernating animals. Under no circumstances do the former possess the power of evolving sufficient heat to maintain their requisite temperature; whereas the latter, when in a state of activity, preserve a uniformly elevated temperature: it is only when the animal is disposed to sleep, whether ordinary or hybernating, that the temperature begins to sink. The last proof of the almost total cessation of breathing during hybernation, is the capability of the animal to live for a considerable period in noxious

gases, and even under water. Spallanzani narrates an experiment, in which he confined a marmot and a bat for four hours in carbonic acid gas, and yet they lived. Dr. Hall immersed a Hedgehog and a bat in water of 41°; the former was kept 22 minutes, the latter 16 minutes, under the surface, without any injury to them. Now these animals, when active, are as speedily asphyxiated by drowning as any other of the mammalia; at least, such seems to be the case, according to Dr. Hall's experiments, in which he found that a hedgehog was killed in three minutes, from the time of immersion. Our author, therefore, differs from Sir A. Carlisle, and Dr. Edwards, when they assert that "animals of the class mammalia, which hybernate, have at all times a power of subsisting under a confined respiration, which would destroy other animals, not having *this peculiar habit.*"

2. *Of the Irritability during Hybernation.*—The very circumstance of the animal's living when deprived of atmospheric air, is an argument that their irritability or tenacity of life must be much increased; and this is powerfully confirmed, by finding that the heart continues to beat regularly for at least 10 hours, after decapitation and the destruction of the spinal marrow. A comparative experiment was performed on a hedgehog in its active condition; the spinal marrow was simply divided at the occiput. The beat of the right ventrical continued upwards of two hours—that of the left one ceased almost immediately; the left auricle was motionless in less than a quarter of an hour, and the right auricle had ceased to beat long before the right ventricle. It has been often asserted that the contractility of the voluntary muscles is impaired during hybernation; this, Dr. Hall says, is quite erroneous, and the mistake has arisen from authors confounding the lethargy of hybernation, with the torpor which is induced by extreme cold. We have only suddenly to arouse a bat or a hedgehog from their hybernating state, and we shall find that the former speedily flies about with great activity, and the latter walks about and does not stagger. In short, the phenomena observed are similar to those of awakening from ordinary sleep.

2. *Of the sensibility.*—Dr. Hall states that all preceding authors have committed a great error, in supposing that the sensibility of animals during hybernation is diminished; in truth, it is quite as perfect as in ordinary sleep; the slightest touch of one of the prickles of a hedgehog is sufficient to arouse it; and the gentlest shake causes a bat to respire. The sensorial functions are, indeed, nearly suspended; if a hedgehog, in its active state, be thrown into water, it immediately uncoils itself and betakes to swimming—in the hybernating state, on the other hand, no fear appears to be excited, and the animal would probably remain still and quiet for a very considerable period, if its sensibility were not acted upon by the contact of the water.

4. *Of the Circulation.*—Dr. Hall, by a nicely-contrived experiment, was enabled to examine the circulation in the wing of the bat, in its state of hybernation; he found that, although the animal did not perceptibly breathe, the circulation continued uninterruptedly; the number of pulsations in the minute was about 28°. All the blood is venous, and the curious fact is, that the left side of the heart, and also the arterial system, are now veno-contractile. This phenomenon is one of the most remarkable in physiology; it accounts for the life of the animal being independent of respiration, and is, in short, the key to the right explanation of the susceptibility of some animals taking on the hybernating state, and of the insusceptibility of the great number.

5. *Of the digestion.*—The bat does not shew any disposition to awake for the purpose of taking food during its continued hybernation; neither are any excretions passed. External warmth, or any excitement, is the only stimulus which arouses it. On the other hand, the hedgehog, if the temperature be about 40° or 45°, awakes every two, three, or four days to take food, and it then returns to its state of lethargy; under similar circumstances, the dormouse awakes daily. Hunger is, therefore, probably the stimulus which induces the animal to awake at intervals.

Having now considered the condition of the leading vital functions during hybernation, we can be at no loss to perceive the marked difference between this state, and that of torpor from extreme cold. We have seen that the muscles do not become stiffened and incapable of motion—that the nerves are not benumbed and paralysed, and that hybernation is a salutary change, and one conducive to the preservation of life; whereas continued torpor from cold, as is well known, generally proves fatal. Indeed we shall find that, when a hybernating animal is subjected to great cold, without any means of increasing and retaining its warmth, it often remains in a state of activity, while others of the same tribe, which are provided with wool or straw to make a nest for themselves, speedily became lethargic. It is, therefore, moderate, and not extreme cold, which disposes to true hybernation. During the Winter months, they seek some secure retreat for nests or burrows, or congregate in clusters; and, if the season is unusually severe, many are found to perish from the cold. Let these particulars be, therefore, well remembered, in order that we may not, in future, mistake the phenomena of torpor from cold for those of true hybernation. In one respect only do these two states agree, and that is, in the dangerous and often fatal consequences of overspeedy reviviscence; if the respiration of an animal, lethargic from hybernation, be suddenly restored and kept permanently excited, the effect is very often the death of the animal.

Recapitulation.—The following conclusions contain the essence of Dr. Hall's observations:—

1. The natural sleep of hybernating animals differs greatly, but only in degree, from the sleep of other animals.
2. This sleep passes insensibly into the state of true hybernation, which becomes more and more profound as the blood loses its arterial qualities.
3. The respiration and evolution of heat are nearly suspended during hybernation.
4. The irritability of the heart and arteries is singularly augmented, so that they become veno-contractile.
5. The sensibility and general muscular motility are unimpaired.
6. The phenomena of true hybernation are very different from those of torpor from cold.
7. Severe cold, like all other causes of pain, rouses the hybernating animal from its lethargy, and, if continued, induces the state of stupor.
8. The phenomena of hybernation are attributable to the susceptibility of the heart and arteries to be stimulated by venous blood, and to the various organs of the body becoming much more irritable than during the state of the ordinary activity of the animal.—*Philosophical Transactions.*

A once popular but now forgotten Essayist thus describes his wishes. They indicate much good sense, and their attainment is within the power of almost every one, who is willing to act with common prudence.

Were I to describe the blessings I desire in life, remarks the writer to whom we have referred, I would be happy in few, but faithful friends. Might I choose my talent, it should rather be good sense than much learning. I would consult in the choice of my dwelling, convenience rather than splendour; and for my circumstances desire a competency rather than a fortune. Business enough to secure one from indolence, and leisure enough to have always an hour for recreation or for rest. I would have no master, and I desire but few servants. I would not be led away by ambition, nor perplexed with disputes. I would enjoy the blessings of health, but would rather be indebted for its continuance to a regular and active life, and an easy mind, than to any disciple of the school of Hippocrates. As to my passions, since we cannot be wholly without them, I would hate only those whose manners and actions render them odious, and love only the virtuous and the kind. Thus would I pass cheerfully through that portion of my life, which is the prelude to death, and with resignation wait for that which will last forever.

FOOD AND DRINK OF THE ANCIENT IRISH.

In the twelfth century the Irish had two meals a day; the first in winter, was taken before day; the other and principal one, always

late in the evening. Stanihurst must allude to the richer and more civilized, when he tells us, they reclined, at meals, on beds. For Sir John Harrington, writing in 1599, has these words, "Other pleasant and idle tales were needless and impertinent, or to describe O'Neal's fern table and fern forms, spread under the stately canopy of heaven." Their candles were peeled rushes, enveloped in lard or grease; as in other countries, they were placed in lamps of oil. The Irish were insatiably fond of swine's flesh, and so abundant was it, that Cambrensis declares he "never saw the like in any other country;" he notices particularly wild-boars. These the people of the North of Europe esteemed their highest luxury, hence we need not wonder at their attracting them to this isle. A guest of O'Neal asked one of his guards, whether veal was not more delicious than pork? That, answered the other, is as if you asked me whether you were not more honourable than an O'Neal. As they but imperfectly boiled or roasted their meat, it was filled with crude juices, and produced the leprosy in those who ate of it. The leprosy was in fact a very common disease formerly in Ireland; Munster had many leper houses—the prevalence of this affection has been observed among other people with whom pork constituted the principal article of diet. The Irish believed that the bad effects of this and of every other ailment were to be effectually corrected by the use of aquavitæs. It was about the middle of the twelfth century, that the distillation of ardent spirit was introduced into Europe. For some time it was employed only as a medicine, and its effects in preserving health, prolonging life, dissipating humours, strengthening the heart, and in curing colic, dropsy, palsy, ague and a host of other diseases was firmly believed on the faith of physicians.—This caused it to be eagerly sought after, and hence its deceptive title of *aquavitæ* or *eau de vie*, that is, the water of life. At what time this liquor reached Ireland is not ascertained. When it did, however, it received an equivalent appellation, that of usquebaugh, usquebah, or simply wiskey. From Stanihurst it would appear that at first it did not constitute a common drink, but was employed in small quantities medicinally; for Spanish wine was in great request, in exchange for which, the Irish gave their peltry, at that time almost their only riches Moryson says they preferred their own usquebah to the English aquavitæ, because they mingled with it raisins, fennel seed, and other ingredients, which was thought to mitigate its heat, and make it more pleasant, less inflaming, and more refreshing to a weak stomach. From hence it appears, the Irish themselves distilled a spirit from malt as early as 1590, and imitated foreign *liqueurs* by adding aromatic seeds and spices, as was practiced in France as early, according to Le Gland, as 1313. The Irish *bulcaen*, Rutty tells us, was made from black oats. Its name from *buile*, madness, and *ceann* the head, indicates the violent effects of this fiery spirit. The nectar of the Irish was composed of honey, wine, ginger, pepper, and cinnamon. It was called piment. The French poets of the thirteenth century speak of it with rapture as being a most delicious beverage. They regarded it as the very per-

fection of human ingenuity; the union of the juice and spirit of the grape, with the perfume of foreign aromatics, so highly prized, in the same liquor.*

THE EFFECTS OF ARTS, TRADES, ETC. ON HEALTH.

Bleachers are exposed to chlorine both in inhalation, and by often standing for the whole day in water strongly impregnated with this gas. They work in open sheds, and are occasionally employed in the field, spreading out the yarn. They are healthy and strong.—None are affected with rheumatism. They live to a good age.

The *brass-founders* suffer from the inhalation of the volatilised metal. In the founding of *yellow* brass in particular, the evolution of oxide of zinc is very great. It immediately affects respiration: it less directly affects the digestive organs. The men suffer from difficulty of breathing, cough, pain at the stomach, and sometimes morning vomiting. The brass-melters of Birmingham state their liability also to an intermittent fever, which they term the brass-ague, and which attacks them from once a month to once a year, and leaves them in a state of great debility. As a preventive they are in the habit of taking emetics. They are often intemperate. In Leeds we did not find one brass-founder more than forty years of age; though we have since been informed that there are two brass-founders in the neighbourhood, of the ages of sixty and seventy, who have continued at the employ from boyhood. The *turners*, *filers*, and *dressers of brass*, if confined to this metal, do not seem to be more unhealthy than the generality of our townsmen. We observe, among the filers, the hair of the head changed to green.—This I suppose to result from the oil of the hair combining with the copper in the brass particles.

Gilt-button-makers, in the *casting* department, are subjected not only to great heat, but to rather severe effects from the fumes of zinc. These are giddiness, headach, sickness, reduction of the appetite, and bilious disorders. The men have the appearance of ill health; forty-five is about the average duration of life. In this, however, as well as other baneful occupations, it is difficult to determine the proportion of evil which the employ and intemperance respectively produce; for labour that distresses is generally well paid; high wages admit considerable intervals of rest and leisure; and leisure, by most uneducated workmen, is spent happily only at the alehouse. In *gilding*, the temperature of the rooms is 110° to 120°. But the principal evil is the mercurial vapour. Reduction of appetite and of sleep, trembling of the limbs, soreness of the gums, and disorder of the bowels are the common effects. At Birmingham, the women employed in this department begin their work at 10 a. m., and leave it at 5 p. m. They seldom live to full age.

Comb-makers, exposed to a disagreeable odour from the bullocks' hoofs, are healthy and long-lived.

Engravers fix the trunk and limbs more than almost any other

* Ledwich's Antiquities of Ireland

operatives. The head is brought forward, and the eye intensely and long occupied with objects generally so small as to require a strong artificial lens. In one part of the process, the engraver is subjected to the annoyance of nitrous fumes, but this is only occasional. The posture and confinement affect the head, but more frequently, and more considerably, the organs of digestion. Sometimes the appetite is reduced, almost always the action of the bowels is greatly impaired. Organic diseases, however, of the abdominal viscera are by no means so frequent as in many other sedentary occupations, tailors and shoemakers for instance. This I attribute to the less general intemperance of engravers. The employment affects vision. Young men, for a short time after removing the lens, are unable to judge accurately of the relative size of objects, even at a foot's distance. And the eyes of old engravers are considerably impaired, both as optical and vital instruments.*

Preparers or dressers of hair—men, women or boys—are in an atmosphere of dust and stench, especially when employed on the foreign article. The winnower suffers most. The complexion is soon rendered pale, the appetite reduced, the head affected with pain, respiration impeded, cough and expectoration established, the body emaciated. I scarcely need add, that life is sacrificed to a continuance of the employ. In most baneful arts and occupations the wages are high; but here we find with surprise, that the winnower dues not earn more than 4*s*. 6*d*. or 5*s*. a week. For what a pittance is health broken and life destroyed! But why should the winnowing be effected by hand at all? Why not employ machinery to turn the fan ? or why not collect the dust in a box, and carry it off through a wooden chimney by the current from the fan? Few persons, indeed, are employed in the dressing of hair, and fewer are acquainted with their situation and suffering. This may palliate, but cannot excuse the neglect.

The *manufacturers of white lead* are subjected to its poison, both by the lungs and the skin. The dust and exhalation are most from the white-beds and the packing; little from smelting. There is only stench from the grinding, and neither dust nor smell from the blue-beds. Such, at least, was the statement of the managers of an establishment at Hull; for we were not permitted personally to inspect the process, though we examined the men. In several departments the heat is such as to produce sweating. Drinking, however, is less than in many other hot emplyments; and white-lead preparers are not, as a body, intemperate. In all departments the men and women are sallow and thin, and complain frequently

* Mr. B., now about the age of 60, was closely employed in engraving for 30 years. His right eye, that which he applied with a convex lens to his art, is considerably more prominent than his lett; and he is consequently obliged to close it when he looks at distant objects. Though not of late years engaged in engraving, he cannot accurately estimate the distance and relative position of near objects. In playing at backgammon, for instance, he frequently takes up a wrong marker. In weak light, the left eye is better than the right. Cases of this kind illustrate some points of function and disease.

of headach and loss of appetite. The effects of the lead are most marked in the white-beds and packing departments. Here, men soon complain of headach, drowsiness, sickness, vomiting, griping, obstinate constipation; and to these succeed colic or inflammation of the bowels, disorders of the urinary organs, and, finally, the most marked of the diseases from lead—palsy. We observed the muscles of the fore-arm more frequently and sooner to suffer than other parts. The eyes are also affected with chronic inflammation, or reduced nervous power. Persons commence the manufacture about the age of twenty; many soon leave, from broken health; those who endure the employ do not remain, on the average, longer than the age of forty-five; and during one-third of these twenty-five years, the men are laid up in bed, or decrepit from colic or palsy. The oldest man known in a large establishment at Hull, we found to have attained the age of fifty-four; but he is now unable to work. It is sixteen years since he entered the employ, and during this period he has been laid up twenty-eight times from serious disease! Each attack has been worse than its predecessor. He has been, on one occasion, nineteen weeks in bed, with scarcely the power of stirring a limb, and was a month without any evacuation from the bowels. This miserable man is now partially paralytic; he has scarcely any motion in either wrist, and his lower extremities are so weakened that he can scarcely trail himself along, even with the aid of a crutch. His haggard countenance and emaciated frame give the appearance of the age of eighty rather than of fifty-four. No person can be a month in the worst department without a serious attack of disease. Drunkards suffer most. One of them was said to have been suddenly seized with violent insanity while packing lead, and to have died soon after. Persons do not work in the lead-manufactory more than five days a week on the average; and as no man could be induced to remain in the destructive departments, there is a regular change of duties. Thus, though none are destroyed, all are exposed in turn to the most baneful process.—What means can be used to improve the state of these wretched operatives? Last year I examined with care the agency of white lead, which was said to have been rendered innoxious by a peculiar process. I regret to add, that I cannot support the statement of the projector. Will any chemical process avail to prevent the poisonous effects of this mineral? Can any substitute be found for its use in our arts and manufactures? For paint, Mr. Parkes, the chemist, recommends carbonate or oxide of zinc, which, if not wholly harmless, is a less noxious substance, and states, that though not quite so white, it keeps its hue longer than the common carbonate of lead. One means, at least, of prevention, is quite practicable—cleanliness. The success of this simple measure, at one manufactory, warrants our belief that more than half the diseases of lead-preparers would be prevented by washing and brushing the hands and skin whenever they leave work, cleaning the mouth, changing the dress, and the regular use of the bath. A linen dress is also recommended as excluding from the skin much of the dust

which would enter through woollen. The rooms in which the processes are carried on ought, of course, to be spacious and well ventilated; and there should always be a strong draught through the furnace. A subsidiary chimney, anterior to the ordinary one, is mentioned by Dr. Christison as particularly efficient in carrying off the exhalations from the rakings. Men should never be allowed to take their meals in the workshops. Fatty aliments are recommended as a preservative from the poison of lead.

Soap-boilers, exposed to exhalations from the oil and alkali, are healthy, and even ruddy. During the plague in London this employ was said to be remarkably exempt. Soap-boilers are generally temperate and live to full age.

Soldiers.—The capacity of the chest in soldiers appears to be considerably greater than that in artisans, and, indeed, in most other classes of society. Nineteen individuals from the 14th Light Dragoons, examined by an apparatus which may be termed a pulmometer, gave an average of 217 cubic inches of air, which a man could throw out at one full expiration. Nine were officers, and the average of these was 240 cubic inches; four musicians, who used wind instruments, and the average was 220; six privates, 247. A tall young cornet threw out 295; and this is the largest expiration we have known.

Sugar-refiners are exposed to more heat than almost any class of operatives. The temperature in which they work is 70°, 90°, and sometimes 120°; and that of the stoves is 150°, 180°, and often 200°. Germans, bearing the work better than Englishmen, are almost exclusively employed. Though dressed only in flannel shirts and linen trousers, they perspire profusely: on coming out of the stoves, however, they take care to rub the skin dry. A disagreeable acetous exhalation arises during the process, but does not appear to affect health. The steam also is sometimes so great as to prevent the men seeing each other. A barrel of ale placed in the sugar-house allows free potation; much, indeed, is taken—from three to four, or even five quarts each per day; but the men do not appear to suffer from this quantity; and drunkenness is rare. They work from 3 A.M. to 3 P.M.: the labour is great. Sugar-refiners are healthy and remarkably muscular: they never suffer from the complaints commonly termed colds. They are said to be rather frequently affected with hernia, to be subject to rheumatism, and to be worn out, or die consumptive, generally before they reach the age of fifty.—[*Thackra, 2d Edition.*

REASONING FACULTIES OF ANIMALS.

That animals possess the faculty of reasoning, and are not solely guided by instinct, is the opinion of many British as well as foreign naturalists, and numerous facts corroborative of this doctrine may be found scattered throughout their works;—doubtless a more enlarged acquaintance with, and a stricter attention to, their habits would still farther strengthen and confirm this hypothesis.

The sagacity of the beaver, the cunning of the fox, the polity of the bee, the industry of the ant, &c. &c. are so obvious to the most superficial observer, as to have become proverbial; and amongst the volatile tribes, instances of foresight and reasoning are often displayed, wholly unaccountable on the principle of mere blind instinct. To this purpose, an American naturalist (Dr. Steel) mentions the sagacity of the swallows frequenting the banks of the Saratoga, which often alter the construction of their nests according to circumstances, in order to secure their young from the depredation of their natural enemies; and an instance of equal, if not greater, sagacity in this tribe of volatiles, I myself witnessed in the south of Scotland several years ago. The spring had been uncommonly mild, and the congregation of swallows in the vicinity of the Cheviot was greater than had ever before been observed by the oldest inhabitant of this border district. Numerous flocks of them might be seen constructing their nests underneath the straw-thatched roofs of the barns and farm-steads on the Kale and the Beaumont. The ancient straggling mansion of Thirlstane seemed in particular to be one of their favourite resorts; the walls were thickly studded with their nests, and two were even attached to the upper corners of one of the bed-room windows. An unusual commotion amongst this feathered community on morning attracted the notice of the family while seated at breakfast, and led to the discovery, that the two nests within reach of the house-maid's broom had been swept away.

Throughout the early part of the day the birds congregated in great numbers on a dilapidated shed in the rear of the house, and by their incessant chattering and agitation seemed to be engaged in deep consultation. Towards noon, however, the noisy conclave broke up, when the bereaved pairs immediately recommenced their labours at an angle of the roof farthest from the insecure site they had before chosen. The necessity for despatch was doubtless urgent, as the breeding season seemed at hand; and in this emergency they were not left unaided by their companions, since six, sometimes eight, were seen flying backwards and forwards, and poising themselves on the edge of the overhanging roof, loaded with materials, while as many as could find room assisted in the building operations.

Without entering on the disputed point, whether the lower order of animals, even admitting them to be endowed with a certain portion of reason, are, or are not, capable of transmitting their individual acquisitions to the species, it seems at least sufficiently evident in the above instance, that the swallows not only communicated a knowledge of their wants and feelings to each other, but profited by the united experience and assistance of their kind.

But, however this may be, I have widely deviated from my purpose, which was merely to recount what appeared to me a striking instance of reasoning in the common sparrow.

The day of the opening of London Bridge was a day of jubilee to the flocks of those little familiars in the outskirts of the metro-

polis, owing to the almost total desertion of the streets and squares by people of every rank and degree who had hurried to witness that splendid spectacle.

A few of them from an adjoining garden, that usually pick up in haste and on the wing the crumbs that I am in the daily habit of throwing to them from the breakfast-table, emboldened by the absence of all bustle, alighted fearlessly on the pavement, and soon devoured their allowance, except a hard crust about the size of a walnut, which resisted their united efforts to reduce it to fragments.

As I stood watching their proceedings, they one by one flew off, with the exception of a single bird, which continued its efforts for some time longer. After a while, however, even its patience failed, and it hopped to the edge of the curb-stone, apparently about to take flight after its companions, when suddenly, as if actuated by some new idea, it returned, took up the *hard-harted* crust in its bill, and flying towards the kennel immersed it in a little puddel of stagnant water. Thus softened, the sagacious little creature brought it back to the pavement, and readily succeeded in picking it to pieces.

A. C. Hall.

JOURNAL OF HEALTH AND RECREATION.

PHILADELPHIA, JULY, 1833.

PHRENOLOGY.

Every new novel has a trumpeter of its merits amongst the corps editorial;—and every pamphlet, polemical or political, is ushered into public notice by the glad acclaim of the dogmatists or partisans, repectively, whose views it more especially favours. But, works which do not appeal to the sordid interests, or to the passions and prejudices of the world, however learned in disquisition, philosophical in argument, and mild and suasive in morals, are often doomed to be coldly received, long treated with indifference, if not entirely overlooked, and for a season forgotten. The higher the aim of their authors, the more determinate, often, is the dogged opposition made to their writings and teachings. Quacks, conjurers and knaves of all degrees meet with ready credence, and are often eagerly sought after. They promise present gain and freedom from present ills, no matter at what future cost and hazard.—But the philosopher, who, looking to remote and grand results, shall infringe ever so little on present even though they be vicious enjoyments—vicious because opposed to health and serenity of mind, is scoffed at, and ridiculed as an enthusiast, a mere man of theory and a fosterer of melancholy. Where shall we find a stron-

ger contrast, and at the same time a better illustration of our argument, than in the diffusion of the novels of Sir Walter Scott, and the comparative neglect of the labours, by teaching and writing, of the works of Gall and Spurzheim. The first have been circulated through the whole civilized world, and read and praised to satiety;—and what was the aim of their author? Reputation and still more money.—And what their effects? To tickle the fancy, excite undue deference to aristocratic privileges, and misplaced enthusiasm for aristocratic lawlessness and rapine,—to the oversight of the milder virtues and domestic duties. They served at best to amuse—their morality is of a doubtful character. The doctrines of Phrenology, on the other hand, coldly received and long treated with ridicule, were any thing but a passport to the present fame or emoluments of their first authors and yet zealous promulgators. Their effects would be a reform of the prevailing system of education, an improvement of the whole human race—by pointing out and enforcing those physical and organic laws, an observance of which is necessary to the full development of the bodily powers, and a complete and regular and happy display, in suitable series and alternation, of the faculties of the mind. Phrenology is connected with and constitutes a basis for establishing firmly correct systems of education, morality and jurisprudence, conformably with charity and religion. These objects were too great and momentous to be suddenly appreciated in their full proportion and importance by the crowd:—they were on this account much neglected, and even decried by men who thought they could in this way excuse themselves for the prejudices of ignorance and the apathy of indolence.

Time is at length working out a remedy—mankind has too long sufferered by ill digested plans for its guidance and government, not to sometimes turn an ear to the suggestions of wisdom, even though no royal road be offered by which to escape from their grievances. Metaphysicians have mystified their readers and bewildered themselves long enough. It is now admitted pretty generally, that for a man to understand and reason on the processes of thought and the faculties of the mind in general, he must have some knowledge of the organization by and through which the Creator has chosen to perform and reveal them. To treat of vision requires one to be conversant with the structure of the several parts of the eye, and the nature of the agencies by which it is more peculiarly impressed and excited. So it is admitted now—that to discuss the subject of mental phenomena demands a knowledge of the structure of the material instrument of thought, or the brain, and its various depen-

dencies and connexions with other parts of the animal machine.—Physiology ought then of necessity to precede the study of intellectual and ethical philosophy. More particularly is it incumbent on us to become masters of that part of special physiology now designated by the term *phrenology*. This latter treats of structure and of function, of innate propensity and acquired disposition, of motives compounded of innate desire and of after education,—of the struggle between the propension for evil and the sentiment of good—of the means of strengthening the latter, and checking the former, and of turning the intellect in this service to the best account. It shows the harmony between the intentions of Providence, and the laws which govern the animal economy,—and between good health and good morals,—and between all reasonable indulgence and wisdom. It shows wherein the misconduct of the parent becomes the source of infirmity, and of physical and moral obliquity in the child. By clearly displaying the danger, it removes all excuse of ignorance of the means of prevention not less than of removal.

These high and momentous topics have been discussed and illustrated at some length in works to which hitherto the American public have had a very restricted access;—but which are now placed within their reach. Enterprising publishers of Boston, Messrs. Marsh, Capen & Lyon, have issued the works of Dr. Spurzheim on the Physiognomical System, and on Insanity, and on Education—and to be followed by those of Mr. Combe, and of his brother Dr. Combe, of Edinburgh.

Ignorance and Crime.—It appears from a report based on statistical returns made to the French Academy of Sciences, that the ignorant and unlettered in France furnish the greatest number of criminals. In 1830, out of 6,962 accused of various crimes, 4,319 did not know either how to read or write, 1,826 had very limited notions on these points, 688 could read and write, and only 129 had been well instructed in these things. More than three-fifths of the whole number (61 to 62 in 100) did not know either how to read or to write.

From the illiterate alone, that is, those ignorant of the above elements of human knowledge, came the list of parricides.

Education in Europe.—It has been estimated that there are from eight to nine millions of males in France who are destitute of in-

struction—being in the proportion to the whole number as 6 to 10.

The proportion of children going to school to the entire population, is already in some of the departments in France, a fourteenth. But these are favourable examples and far from being the average, which is much lower. In Holland and Austria, the proportion is 11th to 13th—in Prussia 18th—in England 16th—Russia 1 in 954.

Skin and Stomach.—Let these two important organs be attended to in a proper manner, and all the diseases of summer, cholera inclusive, will be avoided. The kind of attention to the skin consists in daily frictions with a coarse towel or flesh brush—the tepid or warm bath twice, or at the least once a week; or, in lieu of this, daily sponging the surface with salt and water with the chill taken off it, and then rubbing with a dry coarse towel. The stomach will have justice done it by an avoidance of all alcoholic drinks; the moderate use of tea and coffee, if such be habitually taken; a due proportion of well boiled vegetables with meat roasted or boiled—and on occasions in sanguine temperament in a feverish habit of body, a moderate share of ripe cooked fruits—to the exclusion however of cherries and plums. In all cases where disease is present in a place, no kind of fruit nor any new or unaccustomed article of diet whatever should be taken *in the evening*.

CHOLERA IN HAVANA.

The following sketch of medical topagraphy of the city of Havana, and of the Cholera, as it prevailed in that city, will prove acceptable to our readers. We derive it from a longer article on the subject published in the Boston *Medical Magazine*. In preceding pages of this number of the Journal, we have introduced the highly interesting notice of the disease in Quebec, by Archdeacon Mountain. To the intemperate it exhibits a warning against continuance in habits, which, wherever the cholera prevailed, so invariably endanger the health and lives of those indulging in them. A husband and wife both drunkards!—Both dead of the disease,—leaving behind them two orphans! Persons dead drunk taken to the hospital as cholera patients, going out when sobered—and soon after on returning to their habits of drunkenness brought in once more, under no false alarm, but actually sick, and that unto death, with cholera! A man coming on board the steam boat singing a drinking song, himself a drunkard,—on the second day a corpse

and thrown overboard!—What sholemn lessons are these, and the like of them are furnished in, alas! large numbers in almost every place in which the cholera has committed its fearful ravages.

In the Havana, it should be noted that, the first victim to the disease was an intemperate man.

On another point the non-contagiousness of cholera, the testimony of the venerable Archdeacon is clear and encouraging when he says—

"The Medical gentlemen who are constantly busy in contact with the patients; the clergy who, to talk with them to any purpose must, in many instances touch them and receive their breath close to their own;—the friends and attendants about them night and day, who relieve them by friction of the hand till they are themselves perspiring with open pores—and others who handle their clothing and bedding before and after death, *remained quite as exempt as any other classes of persons from the disease.*"

We now proceed to give the promised account of the epidemic in Havana.

"Havana is a walled city and is situated on a harbour of the same name, with the sea in full view within a short distance upon the north. The exact population of the city and its suburbs is not known, but is differently estimated from 100,000 to 140,000 souls, the mean of which, 120,000, is undoubtedly not far from the truth. It is thought that the number of inhabitants in the city is about equal to that in the suburbs, and that blacks and whites constitute an equal proportion. The city within the walls is regularly laid out in squares, the streets intersecting each other at right angles. The streets are narrow and filthy. The rain water and waste water from houses, run on the surface, in the middle of the streets, which consequently are always more or less wet. Most of the streets in the suburbs are also narrow, unpaved and exceedingly filthy from the accumulation of waste water, together with animal and vegetable substances undergoing decomposition. Many of the streets are impassable with carriages, the wheels going into the filth and mud from one to two feet. The bank of the ditch which surrounds the city, immediately outside of the wall, is strewed with all manner of nuisances, such as putrid carcases of fowls and animals, excrements of bipeds and quadrupeds, and decomposing fruits and vegetables. The houses in the suburbs are principally one story high, and have large unglazed windows towards the street.

"The climate is delightful in every respect; the mercury, by Fahrenheit's thermometer, ranges, while the sun is above the horizon, from 78° to 85°, and while it is below the horizon, from 70° to 77°. The mercury seldom rises above 90°, and as seldom falls below 65°. The writer of this was credibly informed, by a very intelligent valetudinarian, who has resided there some years for the benefit of his health, that the mercury was never known to fall be-

low 58° above zero. The same degree of heat, as indicated by the thermometer, is much less oppressive in Havana than in the United States, in consequence of the refreshing breezes, which almost always prevail in the former place. The perpendicular rise and fall of the tide is from eighteen inches to two feet, consequently, comparatively speaking, there are no flats from the surface of which, mephitic vapors can escape.

"The native inhabitants are very temperate in their habits, as it respects the use of stimulants; their drink consisting, principally, of orangeade, lemonade, and coffee.

"Notwithstanding the salubrity of the climate, the temperance of the inhabitants, and other circumstance favourable to health, except the narrowness and filth of the streets, Cholera prevailed, as a malignant epidemic, from the last of February to the middle of April, at which time, however, it had not entirely disappeared, as ten to fifteen fatal cases were occurring daily. A physician, who was in respectable practice, remarked, that, for several months before the cholera made its appearance, affections of the mucus membrane were uncommonly numerous, especially diarrhœa, coughs, and catarrh. From the middle of February to the middle of March, almost every person complained of having a severe attack of catarrh; for which no obvious reason could be assigned. On the 23d of February, the first case of cholera, that is known to have occurred in Havana, was found at the Punta, (point) which is at the north part of the city, outside of the walls, within one hundred yards of the sea. The subject was a white man, whose habits, being intemperate, were an exception to the general character of the Spaniards. The case terminated fatally, in a few hours after attack. Soldiers were stationed about the house, in which this case occurred, to prevent any person approaching it and contracting the disease. Although a sanitory cordon was thus established, still the disease appeared in different parts of the city and suburbs.

"The writer was not informed of the occurrence of any case after the first, until the 27th, when several cases occurred and terminated fatally. After this, the number of fatal cases increased gradually until the 10th of March, on which day there were 221 burials, of whom 46 were whites, in the three principal cemeteries. Besides these three cemeteries, there were two or three smaller ones. After this time, the disaese still continued to increase in malignancy and in number of attacks. On the 22d, the number of burials, in the three cemeteries just referred to, was 555, of whom, 153 were whites. It was judged by physicians, and other persons who had intercourse at the Governor's House, that, on the 22d instant, there were no less than 650 or 700 deaths. At this time the epidemic had attained its maximum of severity, as indicated by the number of daily fatal cases. After the first of April, the number of daily burials began to diminish, and continued to do so until the middle of April, when there were 10 or 15 only per day."

"*Origin of the Disease.* The epidemic could not be traced to any foreign source. The person, first attacked by the disease had

not been out of the city, as the writer was informed, nor had he intercourse with foreigners or with foreign vessels in port."

"The epidemic, as it has already been remarked, commenced in the suburbs, and it was there that it caused the greatest destruction, and particularly in the southwestern part of the suburbs, where many entire families died of the disease. Although the population is about equal within and without the walls, still the number of deaths in the latter place far exceeded that in the former. Whether the greater fatality of the disease in this, than in any other part of Havana, is to be attributed to the uncleanliness of the streets, or to some other cause, is beyond our knowledge. There can be no doubt, however, that the filth, from which emanated an almost insufferable fœtor, was a powerful excitant of the disease, and that it co-operated with other causes to occasion the great number of cases in this particular section of the city. Soon after the irruption of the disease, the streets within the walls were made comparatively clean, by setting to work in them an increased number of slaves, which circumstance admonishes us (bearing in mind the difference in ratio of deaths in the two localities) that in order to prevent the prevalence of the epidemic, we should place more confidence in measures for cleaning the city, than in quarantine regulations or sanatary cordons."

"*Class of persons attacked.*—By referring to the number of burials on the 10th and 22d of March, a list of which was obtained from an official source, it will be seen that on the former date, twenty per centum of all the bodies buried were whites, and that on the latter date twenty-seven per centum were whites. From this it appears that about three of every four that died were blacks. Persons attacked, when there had been no obvious exciting cause, were more frequently of infirm health than otherwise, so far as the writer's observation extended. This remark is intended to include all persons, whose general health was in a poor state—which state might be the effect of a chronic disease, imprudent habits, or any other cause."

ALEXANDER'S EXPEDITION UP THE ESSEQUIBO.

From this amusing narrative we extract the following curious items of natural history.—

My purpose was now to proceed up the noble Essequibo river towards the El Dorado of Sir Walter Raleigh, and view the mighty forests of the interior, and the varied and beautiful tribes by which they are inhabited. Our residence on the island of Wakenaam had been truly a tropical one. During the night, the tree-frogs, crickets, razor-grinders, reptiles, and insects of every kind, kept up a continued concert. At sunrise, when the flowers unfolded themselves, the humming-birds, with the metallic lustre glittering on their wings, passed rapidly from blossom to blossom. The bright yellow and black mocking-birds flew from their pendant nests, ac-

companied by their neighbours, the wild bees, which construct their earthen hives on the same tree. The continued rains had driven the snakes from their holes, and on the path were seen the bush-master (conacouchi) unrivalled for its brilliant colours, and the deadly nature of its poison; and the labari, equally poisonous, which erects its scales in a frightful manner when irritated. The rattlesnake was also to be met with, and harmless tree snakes of many species. Under the river's bank lay enormous caymen or alligators,—one lately killed measured twenty-two feet. Wild deer and the peccari hog were seen in the glades in the centre of the island; and the jaguar and cougour (the American leopard and lion) occasionally swam over from the main land.

We sailed up the Essequibo for a hundred miles in a small schooner of thirty tons, and occasionally took to canoes or coorials to visit the creeks. We then went up a part of the Mazaroony river, and saw also the unexplored Coioony: these three rivers join their waters about one hundred miles from the mouth of the Essequibo. In sailing or paddling up the stream, the breadth is so great, and the wooded islands so numerous, that it appears as if we navigated a large lake. The Dutch in former times had cotton, indigo, and cocoa estates up the Essequibo, beyond their capital Kykoveral, on an island at the forks or junction of the three rivers. Now, beyond the islands at the mouth of the Essequibo there are no estates, and the mighty forest has obliterated all traces of former cultivation. Solitude and silence are on either hand, not a vestige of the dwellings of the Hollanders being to be seen; and only occasionally in struggling through the entangled brushwood one stumbled over a marble tombstone brought from the shores of the Zuyderzee.

At every turn of the river we discovered objects of great interest. The dense and nearly impenetrable forest itself occupied our chief attention; magnificent trees, altogether new to us, were anchored to the ground by bush-rope, convolvuli, and parasitical plants of every variety. The flowers of these cause the woods to appear as if hung with garlands. Pre-eminent above the others was the towering and majestic Mora, its trunk spread out into buttresses; on its top would be seen the king of the vultures expanding his immense wings to dry after the dews of night. The very peculiar and romantic cry of the bell-bird, or campanero, would be heard at intervals; it is white, about the size of a pigeon, with a leathery excrescence on its forehead, and the sound which it produces in the lone woods is like that of a convent-bell tolling.

"A crash of the reeds and brushwood on the river's bank would be followed by a tapir, the western elephant, coming down to drink and to roll himself in the mud; and the manati or river-cow would lift its black head and small piercing eye above the water to graze on the leaves of the corridore tree. They are shot from a stage fixed in the water, with branches of their favourite food hanging from it; one of twenty-two cwt. was killed not long ago. High up the river, where the alluvium of the estuary is changed for white

sandstone, with occasionally black oxide of manganese, the fish are of delicious flavour; among others, the pacoo, near the Falls or Rapids, which is flat, twenty inches long, and weighs four pounds; it feeds on the seed of the *arum arborescens*, in devouring which the Indians shoot it with their arrows: of similar genus are the cartuback, woboory, and amah.

The most remarkable fish of these rivers are, the *peri* or *omah*, two feet long; its teeth and jaws are so strong, that it cracks the shells of most nuts to feed on their kernels, and is most voracious. * * Also the genus *silurus*, the young of which swim in a shoal of one hundred and fifty over the head of the mother, who, on the approach of danger, opens her mouth, and thus saves her progeny; with the *loricaria calicthys*, or *assa*, which constructs a nest on the surface of pools from the blades of grass floating about, and in this deposits its spawn, which is hatched by the sun. In the dry season this remarkable fish has been dug out of the ground, for it burrows in the rains owing to the strength and power of the spine; in the gill-fin and body it is covered with strong plates, and far below the surface finds moisture to keep it alive. The *electric eel* is also an inhabitant of these waters, and has sometimes nearly proved fatal to the strongest swimmer. If sent to England in tubs, the wood and iron act as conductors, and keep the fish in a continued state of exhaustion, causing, eventually, death: an earthenware jar is the vessel in which to keep it in health.

DURATION OF CERTAIN TREES.

If we consider the trunk of a tree to be increased by the materials accumulated by fresh crops of buds annually produced upon its surface, then it bears a strong analogy to a coral reef, the animals of which possess an individual existence, and are separately employed in increasing the aggregate mass of their habitations.—Strictly speaking, then, the death of a tree can never result from any effects of old age at all similar to those which necessarily destroy life in the animal kingdom, where we find a very limited period of existence assigned to each individual, in consequence of the obstruction of those organs which are destined to perform the function of nutrition, which may be carried on during the old age of the tree as vigorously as it was performed by the young plant.—Those causes, then, which ultimately destroy life in plants must be classed as accidents, or as proceeding from various diseases, induced by the influence of external agency; large limbs are broken off by their own weight, and thus rottenness is introduced into the heart of the trunk, which gradually becomes too feeble to support the foliage, and is blown down. But wherever these and similar accidents have been prevented, trees have attained to a vast antiquity, and there are very plausible reasons for believing that there are at this time in existence many which have endured far beyond the records of history, and must have been standing shortly after the last general catastrophe to which this earth has been subjected.

That the life of very many plants is necessarily very short, as in the case of annuals, biennials, and others, seems to arise from the complete exhaustion which they suffer during the maturation of their seed, all the nutriment prepared in their stems being wholly abstracted by this effort.

In order, however, to give some weight to these conjectures respecting the possible duration of certain trees, it is necessary that we should point out the method by which we are enabled to approximate to the age of very old trees, with some tolerable degree of certainty. In many exogenous trees, which is the character of all the timber of temperate climates, the number of concentric zones observable in a transverse section of their stems, affords an exact measure of their duration, provided the section be made near the root. By placing a strip of paper upon the surface of such a section, and extending it from the centre to the bark, the distances between the several zones can be marked upon it, and thus a register may be formed both of their number and of the relative growth of different years. On account, however, of the frequent inequalities in different parts of the same zone, it is better to take the girth of the tree, and obtain the mean rate of increase, by dividing the mean diameter by the number of zones. No good result can be obtained from any observations of this kind upon trees that are much below a hundred years, as their rate of growth is too unsteady, and varies too much in different individuals prior, to this period; but very useful averages may be obtained from old trees. because, after a certain age, they obtain a more settled rate of increase. The averages which are thus obtained, will serve us for approximating to the age of others. They may also serve as a test for calculating the relative worth of timber of the same kind, as a building material: since the preserving quality in wood depends upon its compactness, and this again upon the slowness of its growth, it may be seen, by simply inspecting the layers of any particular specimen, whether its age is above or below the general average of trees of the same bulk, and consequently whether the compactness of the timber is greater or less than usual. There are various methods of obtaining a scale, which may serve for approximating to the ages of trees, besides the one just mentioned. Their rates of increase may be obtained by measuring their trunks at successive intervals of time; or a lateral incision may be made, and the number of layers counted to a certain depth. In all these expedients, however, the observer must be careful to make great allowance for the fact that trees increase more rapidly in the early stages of their growth than afterwards. The dimensions of several very large trees have been recorded both by ancient and modern observers, and various conjectures have been offered respecting their probable ages. Some of these trees, indeed, like the celebrated chesnut of Mount Ætna, appear to have resulted from the union of several trunks which had grown near together. There are others, however, as the oaks, and more especially the yews, recorded by Evelyn, which are single trees of vast antiquity. De Candolle, by computing the results

of several observations, has ascertained the average increase of the yew to be about one line, or the twelfth of an inch, in diameter, yearly. Applying this rate for calculating the ages of the four most celebrated yew-trees in Great Britain, whose dimensions are on record, he finds them respectively to have lived 1214, 1287, 2558, and 2880 years. In the first of these examples, we have the testimony of history for knowing that this tree was in existence, and must have been of considerable size, in the year 1133, it being recorded that the monks took shelter under it whilst they were rebuilding Fountain's Abbey. These and other facts respecting the probable duration of some of the largest European trees, throw considerable plausibility on the views of Adanson, who, nearly a century ago, had constructed a table, from a regular geometrical formula, for calculating the probable ages of the enormous Baobabs of Senegal. The extended duration of these trees is favoured by the circumstances of their not attaining to any great height, and by their growing in a country where they are never exposed to the effects of frost; there are several examples of their trunks attaining to the enormous dimensions of sixty, and even ninety feet in circumference. Adanson mentions the data upon which he proceeded in constructing his table, and there is no apparent reason for our supposing that his conclusions do not lie within the truth. For example, his table ascribes the age of 210 years to a trunk six feet in diameter: but he had found some trees of this size in a small island off Cape Verd, upon which he noticed the traces of inscriptions, some of which were dated from the fourteenth, and others from the fifteenth century.

Now we can hardly suppose their diameters to have been less than four feet at the time when the inscriptions were first carved upon them: a supposition which allows an increase of only two feet in 300 years, and which would consequently make them 800 instead of 210 years old, as shown by the table. What, then, must be the age of a similar tree of thirty feet in diameter? The table itself ascribes to it a life of 5150 years! But this subject has hitherto engaged so little of the attention of observers, that we want additional testimony before we can be expected to place much confidence in speculations which, it must be confessed, are, at first sight, very startling. De Candolle, indeed, seems to consider the question in some measure settled, and sums up his account with the following remarks:

"I think that I have given a detailed proof in this section of the existence, past or present, on the earth, of some very old trees, viz.—of an elm of 335 years; cypress about 350 years; Cheirostemon about 400 years; ivy 450 years; larch 576 years; orange 630 years; Olive 700 years; Oriental plane 720 years and upwards; cedar of Lebanon about 800 years; oak 810, 1080, 1500 years; lime 1076, 1147 years; yew 1214, 1458, 2588, 2880 years; Taxodium about from 4000 to 6000 years; Raobab 5150 (in the year 1757.)"

HIGH LIVING AND MEAN THINKING.

How much nicer people are in their persons than in their minds. How anxious are they to wear the appearance of wealth and taste in the things of outward show, while their intellects are all poverty and meanness. See one of the apes of fashion with his coxcombries and obstentations of luxury. His clothes must be made by the best tailor, his horses must be of the best blood, his wines of the finest flavor, his cookery of the highest, but his reading is of the poorest frivolities, or of the lowest and most despicable vulgarity. In the enjoyment of the animal senses, he is an epicure; but a pig is a clean feeder compared with his mind; and a pig would eat good and bad, sweet and foul alike, but his mind has no taste except for the most worthless garbage. The pig has no discrimination and a great appetite; the mind which we describe has not the apology of voracity; it is satisfied with little, but the little must be of the worst sort, and every thing of a better quality is rejected by it with disgust. If we could see men's minds as we see their bodies, what a spectacle of nakedness, destitution, deformity, and disease it would be! What hideous dwarfs and cripples! What dirt, and what revolting cravings! and all these in connection with the most exquisite care and pampering of the body. If many a conceited coxcomb could see his own mind, he would see a thing, the like of which is not to be found in the meanest object the world can present. It is not with beggary, in the most degraded state, that it is to be compared, for the beggar has wants, is dissatisfied with his state, has wishes for enjoyments above his lot, but the pauper of intellect is content with his poverty; it is his choice to feed on carrion, he can relish nothing else, he has no desire beyond the filthy fare. Yet he piques himself that he is a superior being; he takes to himself the merit of his tailor, his coach-maker, his upholster, his wine-merchant, his cook; but if the thing were turned inside out, if that concealed nasty corner, his mind, were exposed to view, how degrading would be the exhibition.

Might it not be reasonably expected that people should take as much pride in the nicety of their minds as in that of their persons? The purity of the mind, the careful preservation of it from the defilement of loose of grovelling thoughts, is surely as much a matter of necessary decency as the cleanliness of the body. The coarse-clothing of the person is a badge of poverty; what then should be thought of the coarse entertainment of the imagination? what destitution does it argue? and when it is seen with all the luxuries of abundant wealth, how odious is the contrast between the superfluities of fortune and the pitiable penury of the understanding! The mansion is spacious and elegantly furnished, but the soul of the occupier is only comparable to its dust-hole, a dark dirty receptacle for the vilest trash and rubbish. You see an affluent family in London; you see girls for whose education no cost has been spared, who have been guarded with the most jealous care against vulgar associations, who are to be refined if they are to be nothing else; and you see on their table a Sunday newspaper, the staples of which

are obscenity and scurrility, put forth in style probably much below the loosest conversation of the footman in the hall. How would parents shudder at the thought of their daughters listening to a familiar conversation of the coarsest turn carried on by their lacqueys, and what matters it in effect whether the debauchery is taken in at the eye or the ear? These things deserve to be thought of in another manner. The care of the mind has yet to have a commencement. Its servants and its food have hitherto been of the lowest sort; but on both the character of ministration and nutriment, the purity and soundness of the intellect must greatly depend. A good sign it would be when some of the pride in the ostentation of gold is transferred to the show of the riches of the mind, and when the appearances of poverty of the intellect are shunned as those now are of the poverty of the purse.--*English Magazine.*

ENGLISH SOCIETY DINNERS.

May 6. This is the season for public societies to hold their meetings. It would be next to impossible to ascertain the number, charitable, religious, literary, dramatic, philanthropic, and of all descriptions. I made some attempts, but ceased from their hopelessness. A public spirited individual, who is also a member of parliament, handed me a printed list containing the day and place of meeting of between fifty and sixty of those only with which he was connected. The Egyptian hall, city of London tavern, Crown and Anchor, or some other large building is chosen, and a round of dinners begins; this being most commonly the form of celebration. Persons who were together at the principal schools, as Eton and Harrow, and fellow graduates of the different colleges in the universities, have also their annual dinners, to keep alive early friendships. Many of the associates come up to town from their homes at a distance in the country, on purpose to attend them.

The English are very remarkable for giving dinners. I do not allude to the kind last named, or those in private life; but to their habit of giving them in connexion with objects exclusively public. These, charitable ones among them, they constantly advance in this manner.

> "The veins unfilled, our blood is cold, and then
> We pout upon the morning, are unapt
> To *give* or to forgive; but when we have stuffed
> These pipes and these conveyances of our blood
> With wine and feeding, we have suppler souls
> Than in our priest-like fasts."

If the English meant to go by this doctrine of their great bard, they have done well, for their charities are stupendous. A newspaper can hardly be opened that does not hold up a long list of subscriptions amounting to sums that are sometimes enormous. I have now particular reference to some for building churches and esta-

blishing schools, that within a few days have met my eye. So, in various parts of London, hospitals and other asylums for the distressed, arrest attention bearing the inscription "FOUNDED BY VOLUNTARY CONTRIBUTION," which would be little remarkable, perhaps, were they not beheld in connexion with poor taxes to an amount such as no nation ever before paid. The buildings devoted to these charitable purposes, are often more spacious than the royal palaces, and show an exterior more imposing.

An annual dinner seems an indispensable adjunct to an English charity. Here is a "*Samaritan society;*" or an "*Infirmary for diseases of the eye;*" a society for the "*Relief of decayed Artists;*" another for relieving "*poor authors;*" a fifth for the "*indigent blind;*" a sixth for "*foreigners in distress;*" a seventh for the "*deaf and dumb;*" a society for "*promoting Christian knowledge;*" a "*medical benevolent society,*" and I know not how many more, for I merely take examples, all of which have their anniversary dinners. Whatever the demands upon the charitable fund, there seems always enough for a dinner fund too. Eating and drinking are not the sole objects of this festivity. Business is transacted, reports on the state of the charity made, and speeches delivered, in the course of which the pocket is appealed to. Feeling rises as the inspiring glass goes round, and the evening generally closes with an increase of the treasurer's store. Noblemen, including royal dukes, take part on these occasions, often presiding at the dinners, and otherwise giving their personal instrumentality, and freely their purses, towards the objects of the societies. In France, before the revolution, the noble families were computed at thirty thousand. In England, they may perhaps be computed at six or eight hundred; yet this handful does more of the every day business of the country, than the thirty thousand ever did in France. In France they did the work of chivalry; they fought bravely in the army and navy. England besides this, you trace them in road companies, canal companies, benevolent and public institutions of all kinds, to say nothing of their active patronage of the arts, and their share in politics; in the latter, not simply as cabinet ministers, but speakers, committee-men, and hard-workers in all ways.—*Rush's Memoranda of a residence at the Court of London.*

Doughty's Cabinet of Natural History of American Rural Sports.—We have received the eleventh number of the 2d vol. of this work, which preserves its instructive and amusing character; and exhibits as ornaments two finely coloured lithographic drawings—the first of the *Grey Squirrel*, the second of the *Pine Finch* and the *Purple Finch*. We hope and trust that the meritorious efforts of Mr. Doughty, will continue to meet with encouragement and support from all classes of readers, to whose taste it ministers, and within the compass of whose pecuniary means it easily comes.

NOTICE.—The subscribers to the Journal of Health and Recreation are requested to pay up their arrearages, and to give suitable notice of their intentions for the next year, so that a judgment may be formed of the expediency of continuing the work. Those who have not been heretofore subscribers, and who desire its continuance, will also be good enough to send on in due season, their names to the publisher.